

PATENT CLAIMS

1. A method for interconnection of and fluid communication between two tubular organs (14,16) via an opening at one end (8) of an end portion (15) of a first organ (14) and an aperture (17) in a side wall of a second organ (16),
5 characterised in
a) passing the end portion (15) through a first passage (32) of a first element (1) until the end portion (15) projects past an end edge (4) of the element (1),
b) everting the end portion (15) round the end edge (4),
c) inserting gripping parts (12) of a second element (2) with a second passage (34)
10 in the second organ (16) via the aperture (17), the gripping parts (12) being capable of being influenced to engage with an edge portion (39) of the aperture (17) by inserting the first element (1) in the second passage (34), and inserting the first element (1) with the everted portion (15) of the first organ in the second passage (34).
- 15 2. A method according to claim 1, characterised in that step c) is carried out by firstly inserting the first element (1) with the everted portion (15) of the first organ (14) only partially into the second passage (34) without the gripping parts (12) of the second element (2) being influenced then inserting, the gripping parts (12) of the second element (2) in the
20 aperture (17), and thereafter inserting the first element (1) completely in the second element (2), with the result that the gripping parts (12) are influenced by the first element (1).
- 25 3. A method according to claim 1, characterised in that step c) is carried out by inserting the gripping parts (12) of the second element (2) in the aperture (17), and then inserting the first element (1) with the everted portion (15) completely in the second passage (34) of the second element (2), with the result that the gripping parts are influenced by the first element (1).
- 30 4. A method according to one of the preceding claims, characterised in applying an adhesive (18) at the point of interconnection of the organs (14,16).
- 35 5. A method according to one of the preceding claims, characterised in bringing support parts (43) of the second element (2) into engagement with the outside of the second organ (16) at the edge portion (39) when the gripping parts (12) are inserted in the aperture (17).
6. A method according to one of the preceding claims, characterised in securing the gripping parts (12) and possibly the support parts (43)

in the position wherein they are located after they have been brought into engagement with the second organ (16).

7. A device for implementing the method indicated in one of the claims 1 – 6 for interconnection of two tubular organs (14,16), particularly blood vessels of a body, and fluid communication between them via an opening in an end (8) of an end portion (15) of a first organ (14) and an aperture (17) in a side wall of a second organ (16),

characterised in that the device comprises

- a first element (1) which extends along a first longitudinal axis (31) and has an axially through-going, first passage (32) and a front end portion (3) with a front end edge (4),
- a second element (2) which extends along a second longitudinal axis (33) and has an axially through-going, second passage (34), an axially rear end portion or receiving portion (9) and an axially front portion (7), comprising at least two elongated, first fingers (11), which are arranged at intervals along the circumference of the second passage (34), and comprising respective main portions (37) extending forwards from the receiving portion (9), along and simultaneously towards the second longitudinal axis (33), and gripping parts (12) extending from respective front ends of the main portions (37) and away from the second longitudinal axis (33), where
- a transverse dimension between radially external terminations (38) of the gripping parts (12) is smaller than the transverse dimension or diameter of the aperture (17) when the fingers (11) are relaxed, and
- the front end portion (3) of the first element (1) is arranged for coaxial insertion in the second passage (34) and the front portion (7) via the receiving portion (9) and hereby for exerting a radially outwardly directed force against the main portions (37), thereby moving the main portions (37) and the gripping parts (12) radially outwards until the transverse dimension between the gripping parts' (12) external terminations (38) is larger than the transverse dimension or diameter of the aperture (17).

8. A device according to claim 7, characterised in that the second element (2) comprises at least one additional, second finger (13) comprising a main portion (42) and a support part (43) which are arranged to abut against the outside of the second organ (16) when the gripping parts (12) have been inserted in the aperture (17).

9. A device according to claim 8, characterised in that the main portion of the second finger (13) or possibly at least one of a row of second fingers (13) is convex radially outward.

10. A device according to claim 9,
characterised in that the second element (2) comprises an annular collar (13e) which
is arranged to extend round and be moved axially along the second element's (2)
receiving portion (9) with a small clearance, and along the front portion (7).
- 5 11. A device according to claim 10,
characterised in that at least one finger (11,13) is provided with a shoulder (13d)
which protrudes radially outwards from the finger's (11,13) radially external side
and which is arranged to abut against the collar (13e).
- 10 12. A device according to one of the claims 7-11,
characterised in that the first element (2) comprises a cylindrical, sleeve-shaped,
radially internal portion (45) and a sleeve-shaped casing (13a) which is coaxial with
the internal portion (45) and arranged radially outside it, and whose rear end (47) is
secured to a radially opposing rear end (48) of the internal portion (45), where the
casing (13a) and the internal portion (45) define a cylindrical annulus (46).
- 15 13. A device according to claim 12,
characterised in that in the casing (13a) there is provided a slot (13b), which
extends from a front end (49) of the casing (13a) towards the casing's (13a) rear end
(47), and the second element (2) has an outwardly projecting pin (13d), which is
arranged for insertion in the slot (13b) when the first element (1) is inserted in the
20 second element (2).
14. A device according to one of the claims 7-13,
characterised in that on the outside of the first element (1) there is provided a
shoulder (44) which is arranged to abut against a cooperating portion (10) of the
second element (2) during insertion of the first element (1) in the second element
25 (2), for restricting the insertion distance.
15. A device according to one of the claims 7-14
characterised in that the second element (2) and/or the first element (1) are
perforated.
16. A device according to one of the claims 7-15
30 characterised in that the rear portion (9) of the second element (2) is flared or
bevelled.
17. A device according to one of the claims 7-16
characterised in that the front edge (4) of a first element (1) is located in a first
plane (P1) and the gripping parts (12) are located in a second plane (P2), the planes
35 (P1,P2) forming the same angle with the longitudinal axes (31,33) of the respective
elements (1,2).

18. A device according to claim 17,
characterised in that the angle formed by the planes (P1,P2) with the respective
longitudinal axes (31,33) is at 90°.
19. A device according to claim 17,
5 characterised in that the angle (α) formed by the planes (P1,P2) with the respective
longitudinal axes is acute.